LGC135A

MultiPower Miniature Media Converter

Converts 10-/100-/1000-Mbps copper to SFP.

This tiny Gigabit converter automatically senses speed on the copper side.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500) • FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746 • Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

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FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Normas Oficiales Mexicanas (NOM)Electrical Safety Statement
INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

Table of Contents

1. Specifications....7
2. Overview....8
   2.1 Introduction....8
   2.2 Features....8
   2.3 What's Included....9
   2.4 Hardware Description....9
3. Installation and Operation....10
   3.1 Installing the MultiPower Media Converter....10
   3.2 Powering the Media Converter....10
   3.3 LED Operation....10
Appendix: Fiber Optic Cleaning Guidelines and Electrostatic Discharge Precautions....11
   A.1 Fiber Optic Cleaning Guidelines....11
   A.2 Electrostatic Discharge Precautions....11

1. Specifications

Approvals	FCC Class A, UL/cUL, CSA, CE, RoHS
Standards	IEEE 802.3 10BASE-T twisted pair, IEEE 802.3u 100BASE-TX twisted pair, IEEE 802.3ab 1000BASE-T twisted pair, IEEE 802.3z 1000BASE-LX or SX fiber
Ethernet Connections	Fixed copper port: 10/100/1000BASE-T, autonegotiation, auto-cross, flow control, 1,536 MTU, full line-rate forwarding; SFP fiber port: 10/100/1000BASE-T, autonegotiation, auto-cross, flow control, 10,240 MTU, full line-rate forwarding
Forwarding	Layer 2 packet switching, store-and-forward; Forwarding rate: 1,488,096 pps for 1000 Mbps
MTU	Maximum packet size: 10240, Jumbo and super jumbo frames supported
Connectors	(1) 10/100/1000 RJ-45 twisted-pair copper, (1) 10/100/1000 SFP fiber slot
Indicators	(2) LEDs: (1) FX LNK/ACT, (1) TX LNK/ACT
Environment	Temperature Tolerance: Operating: 32 to 122° F (0 to 50° C), Storage: -31 to +167° F (-35 to +75° C); Humidity: 5 to 95% (noncondensing); Altitude: 0 to 10,000 ft.
Power	AC wall adapter: Input: 100 to 240 VAC, Output: 5 VDC, 2 A max.
Dimensions	0.83"H x 1.8"W x 3.35"D (2.11 x 4.57 x 8.51 cm)
Weight	0.7 lb. (0.3 kg)

2. Overview

2.1 Introduction

The MultiPower Miniature Media Converter links 10-, 100-, or 1000-Mbps segments to fiber cabling. An SFP port enables you to use an SFP to link the converter to many kinds of fiber cable: dual-strand available in LC connectors, and single-strand fiber SFPs available in SC connectors. The fiber port always operates at 1000 Mbps full duplex; the copper port autonegotiates the connected device's speed and duplex mode: 10 Mbps, 100 Mbps, or 1000 Mbps, and half-duplex or full-duplex (including flow control).

The SFP slot requires an SFP module, with or without DDMI (sold separately). SFPs must be MSA-compliant and meet the Class 1 Laser Safety Standard.

Choose from multimode and single-mode SFPs. With a single-mode SFP, the media converter supports distances up to 40 kilometers (24.8 mi.), even 70 kilometers (43.5 mi.), depending on the model you order.

For extra versatility, you can power the Multipower Miniature Media Converter one of three ways: through the external AC power supply included with each converter, through the optional USB Power Adapter Cable (which plugs into a PC's USB port and is sold separately), or through the optional rackmount PowerTray (sold separately). The PowerTray provides power for up to 18 converters in only 5U of rack space. Rackmount ears are included.

2.2 Features

- Connect Ethernet, Fast Ethernet, or Gigabit Ethernet copper ports to fiber optic cable.
- Autosensing copper ports make them perfect for migrating networks.
- Accepts 1250-Mbps SFPs.
- Use as standalone media converters or rackmount in the optional PowerTray.
- Powered by its universal AC power supply, a PC's USB port, or the optional rackmountable PowerTray.
- Auto MDI/MDI-X means you never need to worry about what kind of cable to use.
- Easy to install. Just plug and play.
- Compact size.
- Uses inexpensive CAT5e twisted-pair cable on the copper side.
- Offers Link Fault Pass-Through (LFPT).

2.3 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

- MultiPower Miniature Media Converter
- This user's manual

You will also need:

- An SFP fiber module

NOTE: Table 2-1 lists compatible SFP modules.

Table 2-1. SFP modules.

Product Code	Description
LFP411	SFP, 1250-Mbps Fiber with Extended Diagnostics, 850-nm Multimode, LC, 550 m
LFP412	SFP, 1250-Mbps Fiber with Extended Diagnostics, 1310-nm Multimode, LC, 2 km
LFP413	SFP, 1250-Mbps Fiber with Extended Diagnostics, 1310-nm Single-Mode, LC, 10 km
LFP414	SFP, 1250-Mbps Fiber with Extended Diagnostics, 1310-nm Single-Mode, LC, 30 km

2.4 Hardware Description

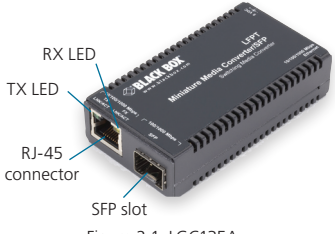


Figure 2-1. LGC135A.

3. Installation and Operation

3.1 Installing the MultiPower Miniature Media Converter

The LGC135A installs in a PowerTray or can be used as a standalone media converter. As a standalone, the converter uses a universal external switching power cube with 100–240 ±10% VAC input and 5 VDC output.

3.2 Powering the Media Converter

The LGC135A includes multiple powering options:

- A country-specific, high-reliability AC power adapter (included)
- PowerTray (ordered separately) for rackmounting

3.3 LED Operation

Each media converter includes two LEDs, located on the RJ-45 connector (see Figure 2-1).

Table 3-1. LED indicators.

LED	Description
TX LNK/ACT	Glows green when a link is established on the fiber port. Blinks green when activity is detected on the fiber port.
RX LNK/ACT	Glows amber when a link is established on the copper port. Blinks amber when activity is detected on the copper port.

Appendix. Fiber Optic Cleaning Guidelines and Electrostatic Discharge Precautions

A.1 Fiber Optic Cleaning Guidelines

Fiber optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at Black Box to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. If you disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment, such as a sealed plastic bag or box, so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

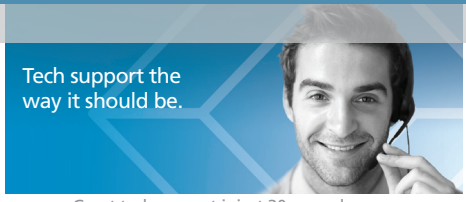
A.2 Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to any product, add-in modules, or standalone units containing electronic components. Always observe the following precautions when installing or handling these kinds of products:

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad, or in a proper ESD bag. Do not slide the modules or standalone units over any surface.

WARNING: Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician, and use tools and techniques that conform to accepted industry practices.

Black Box Tech Support: FREE! Live. 24/7.



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About Black Box

Black Box provides an extensive range of networking and infrastructure products. You'll find everything from cabinets and racks and power and surge protection products to media converters and Ethernet switches all supported by free, live 24/7 Tech support available in 30 seconds or less.

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LGC135A, version 1